

AMENDMENTS TO THE CLAIMS

Claims 1-8 (cancelled)

Claim 9 (Currently amended)

An isolated protein encoded by a nucleic acid molecule selected from the group consisting of:

(a) a nucleic acid molecule comprising at least about 150 nucleotides wherein said nucleic acid molecule comprising at least 150 nucleotides hybridizes in a solution comprising 1X SSC and 0% formamide, at a temperature of about 50°C, to a nucleic acid molecule comprising a nucleic acid sequence selected from the group consisting of SEQ ID NO:16, SEQ ID NO:19, SEQ ID NO:22, SEQ ID NO:36, SEQ ID NO:39, SEQ ID NO:42, ~~SEQ ID NO:45, and a complement of a nucleic acid molecule encoding a protein comprising the amino acid sequence SEQ ID NO:33; and~~

(b) a nucleic acid molecule comprising a fragment of any of said nucleic acid molecules of (a), wherein said fragment comprises at least about 15 nucleotides.

10 (Original) The protein of Claim 9, wherein said protein, when administered to an animal, elicits an immune response against a *Der* HMW-map protein.

11. (Currently amended) The protein of Claim 9, wherein said protein is selected from the group consisting of:

(a) a protein encoded by a nucleic acid molecule having a nucleic acid sequence selected from the group consisting of: SEQ ID NO:14, SEQ ID NO:17, SEQ ID NO:20, SEQ ID NO:34, SEQ ID NO:37, and SEQ ID NO:40, ~~SEQ ID NO:43, and the coding strand of a nucleic acid sequence encoding a protein comprising the amino acid sequence SEQ ID NO:33; and~~

(b) a protein encoded by a nucleic acid molecule comprising any of said nucleic acid molecules of (a).

12. (Currently amended) The protein of Claim 9, wherein said protein is selected from the group consisting of:

(a) a protein comprising an amino acid sequence selected from the group consisting of SEQ ID NO:1, ~~SEQ ID NO:2~~, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, ~~SEQ ID NO:8, SEQ ID NO:9~~, SEQ ID NO:10, SEQ ID NO:11, ~~SEQ~~

~~ID NO:12~~; SEQ ID NO:13, SEQ ID NO:15, SEQ ID NO:18, SEQ ID NO:21, ~~SEQ ID NO:23~~,  
~~SEQ ID NO:24~~, ~~SEQ ID NO:29~~, ~~SEQ ID NO:30~~, ~~SEQ ID NO:31~~, ~~SEQ ID NO:32~~, ~~SEQ ID~~  
~~NO:33~~, SEQ ID NO:35, SEQ ID NO:38, and SEQ ID NO:41, ~~and SEQ ID NO:44~~; and

(b) a protein encoded by an allelic variant of a nucleic acid molecule encoding a protein comprising any of said amino acid sequences of (a).

Claim 13 (Canceled)

Claim 14 (Original) The protein of Claim 9, wherein said protein selectively binds to IgE.

Claim 15 (Original) The protein of Claim 9, wherein said protein comprises an epitope having at least one identifying characteristic selected from the group consisting of :

- (a) said epitope is resistant to  $\beta$ -elimination of peptides;
- (b) said epitope is resistant to Proteinase-K digestion;
- (c) said epitope is reactive to a test designed to detect glycosylated proteins,

wherein said epitope binds to an IgE selected from the group consisting of canine IgE from dogs allergic to mites and feline IgE from cats allergic to mites.

Claim 16 (Currently amended) A therapeutic composition for treating an allergic response to a mite, said therapeutic composition comprising a desensitizing compound selected from the group consisting of:

(a) an isolated mite allergenic protein, wherein said mite allergenic protein is encoded by a nucleic acid molecule that hybridizes under stringent hybridization conditions with the complement of a nucleic acid molecule that encodes an amino acid sequence selected from the group consisting of SEQ ID NO:1, ~~SEQ ID NO:2~~, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, ~~SEQ ID NO:8~~, ~~SEQ ID NO:9~~, SEQ ID NO:10, SEQ ID NO:11, ~~SEQ ID NO:12~~, SEQ ID NO:13, SEQ ID NO:15, SEQ ID NO:18, SEQ ID NO:21, ~~SEQ ID NO:23~~, ~~SEQ ID NO:24~~, ~~SEQ ID NO:29~~, ~~SEQ ID NO:30~~, ~~SEQ ID NO:31~~, ~~SEQ ID NO:32~~, ~~SEQ ID NO:33~~, SEQ ID NO:35, SEQ ID NO:38, and SEQ ID NO:41, ~~and SEQ ID NO:44~~;

- ~~— (b) a mimotope of said mite allergenic protein;~~
- ~~— (c) a mutein of said mite allergenic protein;~~
- ~~— (d) an isolated nucleic acid molecule selected from the group consisting of:~~

- ~~\_\_\_\_\_ (i) a nucleic acid molecule comprising at least about 150 nucleotides wherein said nucleic acid molecule comprising at least 150 nucleotides hybridizes in a solution comprising 1X SSC and 0% formamide, at a temperature of about 50°C, to a nucleic acid molecule comprising a nucleic acid sequence selected from the group consisting of SEQ ID NO:14, SEQ ID NO:16, SEQ ID NO:17, SEQ ID NO:19, SEQ ID NO:20, SEQ ID NO:22, SEQ ID NO:34, SEQ ID NO:36, SEQ ID NO:37, SEQ ID NO:39, SEQ ID NO:40, and SEQ ID NO:42, SEQ ID NO:43, SEQ ID NO:45, and a nucleic acid sequence encoding a protein comprising the amino acid sequence SEQ ID NO:33 and a complement thereof; and~~
- ~~\_\_\_\_\_ (ii) a nucleic acid molecule comprising a fragment of any of said nucleic acid molecules of (i), wherein said fragment comprises at least about 15 nucleotides;~~
- ~~\_\_\_\_\_ (e) an antibody to said mite allergenic protein; and~~
- ~~\_\_\_\_\_ (f) an inhibitor of binding of said mite allergenic protein to IgE.~~

Claim 17 (Original) The composition of Claim 16, wherein said composition further comprises a component selected from the group consisting of an excipient, an adjuvant, and a carrier.

Claim 18 (Canceled)

Claim 19 (Currently amended) An assay kit for testing if an animal is susceptible to or has an allergic response to a mite, said kit comprising:

- (a) an isolated protein encoded by a nucleic acid molecule that hybridizes under stringent hybridization conditions with the complement of a nucleic acid molecule that encodes an amino acid sequence selected from the group consisting of SEQ ID NO:1, ~~SEQ ID NO:2~~, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, ~~SEQ ID NO:8~~, ~~SEQ ID NO:9~~, SEQ ID NO:10, SEQ ID NO:11, ~~SEQ ID NO:12~~, SEQ ID NO:13, SEQ ID NO:15, SEQ ID NO:18, SEQ ID NO:21, ~~SEQ ID NO:23~~, ~~SEQ ID NO:24~~, ~~SEQ ID NO:29~~, ~~SEQ ID NO:30~~, ~~SEQ ID NO:31~~, ~~SEQ ID NO:32~~, ~~SEQ ID NO:33~~, SEQ ID NO:35, SEQ ID NO:38, and SEQ ID NO:41, and ~~SEQ ID NO:44~~; and

(b) a means for determining if said animal is susceptible to or has said allergic response, wherein said means comprises use of said protein to identify animals susceptible to or having allergic responses to mites.

20. (Currently amended) A means to identify an animal susceptible to or having an allergic response to a mite, said method comprising:

(a) contacting said isolated protein that is encoded by a nucleic acid molecule that hybridizes under stringent hybridization conditions with the complement of nucleic acid molecule that encodes an amino acid sequence selected from the group consisting of SEQ ID NO:1, ~~SEQ ID NO:2~~, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, ~~SEQ ID NO:8~~, ~~SEQ ID NO:9~~, SEQ ID NO:10, SEQ ID NO:11, ~~SEQ ID NO:12~~, SEQ ID NO:13, SEQ ID NO:15, SEQ ID NO:18, SEQ ID NO:21, ~~SEQ ID NO:23~~, ~~SEQ ID NO:24~~, ~~SEQ ID NO:29~~, ~~SEQ ID NO:30~~, ~~SEQ ID NO:31~~, ~~SEQ ID NO:32~~, ~~SEQ ID NO:33~~, SEQ ID NO:35, SEQ ID NO:38, and SEQ ID NO:41, ~~and SEQ ID NO:44~~ with antibodies of an animal; and

(b) determining immunocomplex formation between said protein and said antibodies, wherein formation of said immunocomplex indicates that said animal is susceptible to or has said allergic response.

Claim 21 (Original) The method of Claim 20, wherein said step of contacting is performed *in vitro* or *in vivo*.

Claim 22 (Currently amended) A method to desensitize a host animal to an allergic response to a mite, said method comprising administering to said animal a therapeutic composition comprising desensitizing compound selected from the group consisting of:

(a) an isolated mite allergenic protein, wherein said mite allergenic protein is encoded by a nucleic acid molecule that hybridizes under stringent hybridization conditions with the complement of a nucleic acid molecule that encodes an amino acid sequence selected from the group consisting of SEQ ID NO:1, ~~SEQ ID NO:2~~, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, ~~SEQ ID NO:8~~, ~~SEQ ID NO:9~~, SEQ ID NO:10, SEQ ID NO:11, ~~SEQ ID NO:12~~, SEQ ID NO:13, SEQ ID NO:15, SEQ ID NO:18, SEQ ID NO:21, SEQ

~~ID NO:23, SEQ ID NO:24, SEQ ID NO:29, SEQ ID NO:30, SEQ ID NO:31, SEQ ID NO:32,  
SEQ ID NO:33, SEQ ID NO:35, SEQ ID NO:38, and SEQ ID NO:41, and SEQ ID NO:44;~~

- ~~\_\_\_\_\_ (b) a mimotope of said mite allergenic protein;~~
- ~~\_\_\_\_\_ (c) a mutein of said mite allergenic protein;~~
- ~~\_\_\_\_\_ (d) an isolated nucleic acid molecule selected from the group consisting of:~~
- ~~\_\_\_\_\_ (i) a nucleic acid molecule comprising at least about 150 nucleotides~~

~~wherein said nucleic acid molecule comprising at least 150 nucleotides hybridizes in a solution comprising 1X-SSC and 0% formamide, at a temperature of about 50°C, to a nucleic acid molecule comprising a nucleic acid sequence selected from the group consisting of SEQ ID NO:14, SEQ ID NO:16, SEQ ID NO:17, SEQ ID NO:19, SEQ ID NO:20, SEQ ID NO:22, SEQ ID NO:34, SEQ ID NO:36, SEQ ID NO:37, SEQ ID NO:39, SEQ ID NO:40, and SEQ ID NO:42, SEQ ID NO:43, SEQ ID NO:45, and a nucleic acid sequence encoding a protein comprising the amino acid sequence SEQ ID NO:33 and a complement thereof; and~~

~~\_\_\_\_\_ (ii) a nucleic acid molecule comprising a fragment of any of said nucleic acid molecules of (i), wherein said fragment comprises at least about 15 nucleotides;~~

- ~~\_\_\_\_\_ (e) an antibody to said mite allergenic protein; and~~
- ~~\_\_\_\_\_ (f) an inhibitor of binding of said mite allergenic protein to IgE.~~

Claim 23 (Currently amended) the method of Claim 22, wherein said protein comprises an amino acid sequence selected from the group consisting of SEQ ID NO:1, ~~SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:11, SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:15, SEQ ID NO:18, SEQ ID NO:21, SEQ ID NO:23, SEQ ID NO:24, SEQ ID NO:29, SEQ ID NO:30, SEQ ID NO:31, SEQ ID NO:32, SEQ ID NO:33, SEQ ID NO:35, SEQ ID NO:38, and SEQ ID NO:41, and SEQ ID NO:44.~~

Claim 24 (Original) the method of Claim 22, wherein said therapeutic composition further comprises a component selected from the group consisting of an excipient, an adjuvant and a carrier.

Claim 26-31 (Canceled)